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John Colter, Netscape Navigator

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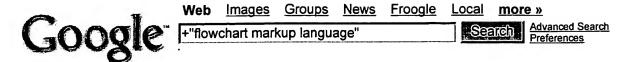
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Web

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Tip: Try removing quotes from your search to get more results.

<u>United States Patent Application: 0050091177</u>
[0012] in a further aspect of The invention, a representation of The decision flowchart is obtained as a **flowchart Markup Language** (FCML) document ... appft1.uspto.gov/.../ 20050091177&RS=DN/20050091177 - Supplemental Result - Similar pages

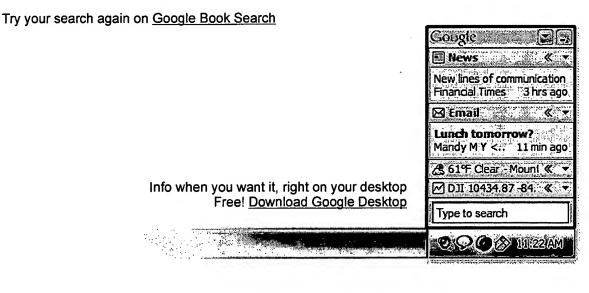
Apparatus, method, and computer program product for converting ... [0012] In a further aspect of the invention, a representation of the decision flowchart is obtained as a **Flowchart Markup Language** (FCML) document ... www.freshpatents.com/ Apparatus-method-and-computer-program-product-for-converting-decision-flowcharts-int... - 21k - <u>Cached</u> - <u>Similar pages</u>

Apparatus, method, and computer program product for converting ... ... representation of the decision flowchart is obtained as a Flowchart Markup Language (FCML) document containing the essence of the decision flowchart. ... www.freshpatents.com/ Apparatus-method-and-computer-program-product-for-converting-decision-flowcharts-int... - 35k - Cached - Similar pages

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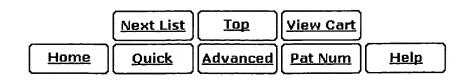


# Refine Search Bayesian and (graphical or GUI) and table and ("cond

- PAT.
- NO.
- Title
- 1 7,003,158 T Handwriting recognition with mixtures of Bayesian networks
- 2 6,999,601 Method for visual tracking using switching linear dynamic systems models
- 3 6,993,462 T Method for motion synthesis and interpolation using switching linear dynamic system models
- 4 6,981,040 T Automatic, personalized online information and product services
- 5 6,973,459 T Adaptive Bayes Network data mining modeling
- 6 6,957,202 M Model selection for decision support systems
- 7 6,952,499 Aspire (autonomous spatial pattern identification and recognition algorithm)
- 8 6,944,317 Method for motion classification using switching linear dynamic systems models
- 9 6,940,540 T Speaker detection and tracking using audiovisual data
- 10 6,937,746 T System and method for automatic recognition of formations in moving target indication data
- 11 6,931,384 System and method providing utility-based decision making about clarification dialog given communicative uncertainty
- 12 6,931,326 T Methods for obtaining and using haplotype data
- 13 6,928,425 System for propagating enrichment between documents
- 14 <u>6,917,839</u> T Surveillance system and method having an operating mode partitioned fault classification model
- 15 6,901,308 T System level analysis and control of manufacturing process variation
- 16 6,879,973 Automated diagnosis of printer systems using bayesian networks
- 17 6,868,319 M Diagnostic system and method
- 18 6,850,252 F Intelligent electronic appliance system and method
- 19 6,847,733 A Retrieval and browsing of database images based on image emphasis and appeal

Patent Database Search Results: Bayesian and (graphical or GUI) and table and ("conditio... Page 2 of 2

- 20 6,839,754 T Network tomography using closely-spaced unicast packets
- 21 6,836,777 II System and method for constructing generic analytical database applications
- 22 6,836,773 T Enterprise web mining system and method
- 23 6,832,069 II Latent property diagnosing procedure
- 24 6,832,006 [T] System and method for controlling image compression based on image emphasis
- 25 6,820,075 T Document-centric system with auto-completion
- 26 6,820,072 T Validation of probabilistic troubleshooters and diagnostic system
- 27 6,811,310 Methods and devices for analysis of X-ray images
- 28 6,807,537 T Mixtures of Bayesian networks
- 29 6,807,491 II Method and apparatus for combining gene predictions using bayesian networks
- 30 6,801,909 T System and method for obtaining user preferences and providing user recommendations for unseen physical and information goods and services
- 31 6,785,636 T Fault diagnosis in a complex system, such as a nuclear plant, using probabilistic reasoning
- 32 6,778,979 II System for automatically generating queries
- 33 6,751,536 The Diagnostic system and method for enabling multistage decision optimization for aircraft preflight dispatch
- 34 <u>6,748,097</u> II Method for varying the number, size, and magnification of photographic prints based on image emphasis and appeal
- 35 6,742,003 Apparatus and accompanying methods for visualizing clusters of data and hierarchical cluster classifications
- 36 6,738,494 II Method for varying an image processing path based on image emphasis and appeal
- 37 6,732,090 T Meta-document management system with user definable personalities
- 38 6,708,146 T Voiceband signal classifier
- 39 6,691,249 II Probabilistic diagnosis, in particular for embedded and remote applications
- 40 6,690,761 Methods and devices for analysis of X-ray images
- 41 <u>6,687,696</u> System and method for personalized search, information filtering, and for generating recommendations utilizing statistical latent class models
- 42 <u>6,687,685</u> T <u>Automated medical decision making utilizing bayesian network knowledge domain modeling</u>
- 43 6,675,159 T Concept-based search and retrieval system
- 44 6,671,405 II Method for automatic assessment of emphasis and appeal in consumer images
- 45 6,641,532 II Computerized medical diagnostic system utilizing list-based processing
- 46 6,633,861 Automatic invocation of computational resources without user intervention across a network
- 47 <u>6,601,055</u> T <u>Explanation generation system for a diagnosis support tool employing an inference system</u>
- 48 6,584,455 T System and method for predicting design errors in integrated circuits
- 49 6,574,537 I Diagnostic system and method
- 50 6,567,814 T Method and apparatus for knowledge discovery in databases



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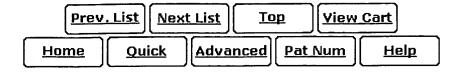
# Refine Search Bayesian and (graphical or GUI) and table and ("cond

- PAT. Title
- 51 6,564,197 Method and apparatus for scalable probabilistic clustering using decision trees
- 52 6,556,960 T Variational inference engine for probabilistic graphical models
- 53 6,553,548 T System and method for recovering from design errors in integrated circuits
- 54 6,539,395 Method for creating a database for comparing music
- 55 6,535,865 T Automated diagnosis of printer systems using Bayesian networks
- 56 6,529,891 T Automatic determination of the number of clusters by mixtures of bayesian networks
- 57 6,529,888 Generating improved belief networks
- 58 6,496,816 T Collaborative filtering with mixtures of bayesian networks
- 59 6,493,637 T Coincidence detection method, products and apparatus
- 60 6,484,010 Tree-based approach to proficiency scaling and diagnostic assessment
- 61 6,460,049 T Method system and computer program product for visualizing an evidence classifier
- 62 6,456,622 M Method for knowledge acquisition for diagnostic bayesian networks
- 63 6,415,276 T Bayesian belief networks for industrial processes
- 64 6,408,290 Mixtures of bayesian networks with decision graphs
- 65 6,345,265 [I] Clustering with mixtures of bayesian networks
- 66 6,340,567 T Genomics via optical mapping with ordered restriction maps
- 67 6,336,108 T Speech recognition with mixtures of bayesian networks
- 68 6,327,574 The Hierarchical models of consumer attributes for targeting content in a privacy-preserving manner
- 69 6,301,579 Method, system, and computer program product for visualizing a data structure
- 70 6,295,525 T Automatic invocation of computational resources without user intervention across a

http://patft.uspto.gov/netacgi/nph-Parser?Sect1=PTO2&Sect2=HITOFF&u=%2Fnetahtml%... 3/5/2006

Patent Database Search Results: Bayesian and (graphical or GUI) and table and ("conditio... Page 2 of 3 network

- 71 6,270,456 To Computerized medical diagnostic system utilizing list-based processing
- 72 6,249,594 M Autosegmentation/autocontouring system and method
- 73 6,233,575 Multilevel taxonomy based on features derived from training documents classification using fisher values as discrimination values
- 74 6,232,974 Decision-theoretic regulation for allocating computational resources among components of multimedia content to improve fidelity
- 75 6,223,143 T Quantitative risk assessment system (QRAS)
- 76 6.216.134 Method and system for visualization of clusters and classifications
- 77 6,212,502 M Modeling and projecting emotion and personality from a computer user interface
- 78 6.185,534 M Modeling emotion and personality in a computer user interface
- 79 6,182,133 Method and apparatus for display of information prefetching and cache status having variable visual indication based on a period of time since prefetching
- 80 6,174,671 The Genomics via optical mapping ordered restriction maps
- 81 6,154,736 Belief networks with decision graphs
- 82 6,144,838 II Tree-based approach to proficiency scaling and diagnostic assessment
- 83 6,095,982 M Spectroscopic method and apparatus for optically detecting abnormal mammalian epithelial tissue
- 84 6,085,226 M Method and apparatus for utility-directed prefetching of web pages into local cache using continual computation and user models
- 85 6,076,083 To Diagnostic system utilizing a Bayesian network model having link weights updated experimentally
- 86 6,067,565 Technique for prefetching a web page of potential future interest in lieu of continuing a current information download
- 87 6,056,690 T Method of diagnosing breast cancer
- 88 6,049,792 Automatic invocation of computational resources without user intervention across a network
- 89 6,041,182 Automatic invocation of computational resources without user intervention
- 90 6,024,705 Automated seismic detection of myocardial ischemia and related measurement of cardiac output parameters
- 91 6,009,452 Apparatus and methods for optimally using available computer resources for task execution during idle-time based on probabilistic assessment of future task instances
- 92 5,995,997 Apparatus and methods for optimally allocating currently available computer resources to future task instances versus continued execution of current task instances
- 93 5,987,415 M Modeling a user's emotion and personality in a computer user interface
- 94 5,935,060 T Computerized medical diagnostic and treatment advice system including list based processing
- 95 5,930,803 M Method, system, and computer program product for visualizing an evidence classifier
- 96 <u>5,802,256</u> The Generating improved belief networks
- 97 5,787,236 In Graphical computer method for analyzing quantum systems
- 98 5,784,616 Apparatus and methods for optimally using available computer resources for task execution during idle-time for future task instances exhibiting incremental value with computation
- 99 <u>5,704,018</u> III Generating improved belief networks
- 100 5,697,373 Optical method and apparatus for the diagnosis of cervical precancers using raman and fluorescence spectroscopies



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# Refine Search Bayesian and (graphical or GUI) and table and ("cond

PAT.

NO.

Title

- 101 5,696,884 Method for assisting in rendering a decision using improved belief networks
- 102 5,546,502 Automatic invocation of computational resources without user intervention
- 103 5,368,471 Method and apparatus for use in monitoring and controlling a black liquor recovery furnace
- 104 5,347,460 Method and system employing optical emission spectroscopy for monitoring and controlling semiconductor fabrication
- 105 5,343,388 Method and apparatus for optimally allocating resources
- 106 5,020,411 M Mobile assault logistic kinetmatic engagement device





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IEEE CNF IEEE Conference Proceeding

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IEEE STD IEEE Standard

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1. Using Bayesian networks as an inference engine in KAMET

Cairo, O.; Penaloza, R.;

Chilean Computer Science Society, 2003. SCCC 2003. Proceedings, 23rd International Conference

6-7 Nov. 2003 Page(s):79 - 85

Digital Object Identifier 10.1109/SCCC.2003.1245448

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1 Computing curricula 2001

September 2001 Journal on Educational Resources in Computing (JERIC)

**Publisher: ACM Press** 

Full text available: pdf(613.63 KB)

html(2.78 KB)

Additional Information: full citation, references, citings, index terms

<sup>2</sup> Mini-buckets: A general scheme for bounded inference



Rina Dechter, Irina Rish

March 2003 Journal of the ACM (JACM), Volume 50 Issue 2

Publisher: ACM Press

Full text available: 🔂 pdf(902.27 KB)

Additional Information: <u>full citation</u>, <u>abstract</u>, <u>references</u>, <u>citings</u>, <u>index</u>

terms

This article presents a class of approximation algorithms that extend the idea of bounded-complexity inference, inspired by successful constraint propagation algorithms, to probabilistic inference and combinatorial optimization. The idea is to bound the dimensionality of dependencies created by inference algorithms. This yields a parameterized scheme, called *mini-buckets*, that offers adjustable trade-off between accuracy and efficiency. The mini-bucket approach to optimization problems, s ...

**Keywords**: Accuracy/complexity trade-off, Bayesian networks, approximation algorithms, combinatorial optimization, probabilistic inference.

3 Special issue on the fusion of domain knowledge with data for decision support:

Combining knowledge from different sources in causal probabilistic models

Marck 1 Pruzdzol Francisco 1 Diez



Marek J. Druzdzel, Francisco J. Díez December 2003 **The Journal of Machine Learning Research**, Volume 4

**Publisher: MIT Press** 

Full text available: pdf(140.32 KB) Additional Information: full citation, abstract, references, index terms

Building probabilistic and decision-theoretic models requires a considerable knowledge engineering effort in which the most daunting task is obtaining the numerical parameters. Authors of Bayesian networks usually combine various sources of information, such as textbooks, statistical reports, databases, and expert judgement. In this paper, we demonstrate the risks of such a combination, even when this knowledge encompasses such seemingly population-independent characteristics as sensitivity and ...

Dependency networks for inference, collaborative filtering, and data visualization

David Heckerman, David Maxwell Chickering, Christopher Meek, Robert Rounthwaite, Carl

Kadie

September 2001 The Journal of Machine Learning Research, Volume 1

Publisher: MIT Press

Full text available: pdf(337.07 KB) Additional Information: full citation, abstract, citings

We describe a graphical model for probabilistic relationships--an alternative to the Bayesian network--called a dependency network. The graph of a dependency network, unlike a Bayesian network, is potentially cyclic. The probability component of a dependency network, like a Bayesian network, is a set of conditional distributions, one for each node given its parents. We identify several basic properties of this representation and describe a computationally efficient procedure for learning the gra ...

5 Posters: Combining speech and haptics for intuitive and efficient navigation through



image databases

Thomas Käster, Michael Pfeiffer, Christian Bauckhage

November 2003 Proceedings of the 5th international conference on Multimodal interfaces

**Publisher:** ACM Press

Full text available: pdf(239.65 KB) Additional Information: full citation, abstract, references, index terms

Given the size of todays professional image databases, the stan-dard approach to objector theme-related image retrieval is to in-teractively navigate through the content. But as most users of such databases are designers or artists who do not have a technical background, navigation interfaces must be intuitive to use and easy to learn. This paper reports on efforts towards this goal. We present a system for intuitive image retrieval that features different moda-lities for interaction. Apart f ...

**Keywords:** content-based image retrieval, fusion of haptics, multimodal interface evaluation, speech, vision processing

6 On inclusion-driven learning of bayesian networks

Robert Castelo, Tomáas Kocka

December 2003 The Journal of Machine Learning Research, Volume 4

Publisher: MIT Press

Full text available: pdf(980.59 KB) Additional Information: full citation, abstract, references, index terms

Two or more Bayesian network structures are Markov equivalent when the corresponding acyclic digraphs encode the same set of conditional independencies. Therefore, the search space of Bayesian network structures may be organized in equivalence classes, where each of them represents a different set of conditional independencies. The collection of sets of conditional independencies obeys a partial order, the so-called "inclusion order." This paper discusses in depth the role that the inclusion ord ...

7 A differential approach to inference in Bayesian networks



Adnan Darwiche

May 2003 Journal of the ACM (JACM), Volume 50 Issue 3

**Publisher: ACM Press** 

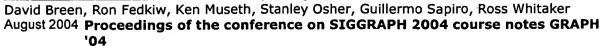
Full text available: pdf(237.97 KB)

Additional Information: full citation, abstract, references, citings, index terms

We present a new approach to inference in Bayesian networks, which is based on representing the network using a polynomial and then retrieving answers to probabilistic queries by evaluating and differentiating the polynomial. The network polynomial itself is exponential in size, but we show how it can be computed efficiently using an arithmetic circuit that can be evaluated and differentiated in time and space linear in the circuit size. The proposed framework for inference subsumes one of the m ...

Keywords: Bayesian networks, Probabilistic reasoning, circuit complexity, compiling

8 Level set and PDE methods for computer graphics



Publisher: ACM Press

Full text available: pdf(17.07 MB) Additional Information: full citation, abstract

Level set methods, an important class of partial differential equation (PDE) methods, define dynamic surfaces implicitly as the level set (iso-surface) of a sampled, evolving nD function. The course begins with preparatory material that introduces the concept of using partial differential equations to solve problems in computer graphics, geometric modeling and computer vision. This will include the structure and behavior of several different types of differential equations, e.g. the level set eq ...

9 Web: Implicit link analysis for small web search

Gui-Rong Xue, Hua-Jun Zeng, Zheng Chen, Wei-Ying Ma, Hong-Jiang Zhang, Chao-Jun Lu July 2003 Proceedings of the 26th annual international ACM SIGIR conference on Research and development in information retrieval

Publisher: ACM Press

Full text available: pdf(228.68 KB)

Additional Information: full citation, abstract, references, citings, index terms

Current Web search engines generally impose link analysis-based re-ranking on web-page retrieval. However, the same techniques, when applied directly to small web search such as intranet and site search, cannot achieve the same performance because their link structures are different from the global Web. In this paper, we propose an approach to constructing implicit links by mining users' access patterns, and then apply a modified PageRank algorithm to re-rank web-pages for small web search. Our ...

**Keywords**: information retrieval, link analysis, log mining, web search

10 Selectivity estimation using probabilistic models

Lise Getoor, Benjamin Taskar, Daphne Koller

May 2001 ACM SIGMOD Record , Proceedings of the 2001 ACM SIGMOD international conference on Management of data SIGMOD '01, Volume 30 Issue 2

**Publisher: ACM Press** 

Full text available: pdf(525.74 KB)

Additional Information: full citation, abstract, references, citings, index terms

Estimating the result size of complex queries that involve selection on multiple attributes and the join of several relations is a difficult but fundamental task in database query processing. It arises in cost-based query optimization, query profiling, and approximate query answering. In this paper, we show how probabilistic graphical models can be effectively used for this task as an accurate and compact approximation of the joint frequency distribution of multiple attributes across multiple ...

11 Context-specific Bayesian clustering for gene expression data

Yoseph Barash, Nir Friedman
April 2001 Proceedings of the fifth annual international conference on Computational

biology

**Publisher: ACM Press** 

Full text available: pdf(233.32 KB)

Additional Information: full citation, abstract, references, citings, index terms

The recent growth in genomic data and measurement of genome-wide expression patterns allows to examine gene regulation by transcription factors using computational tools. In this work, we present a class of mathematical models that help in understanding the

connections between transcription factors and functional classes of genes based on genetic and genomic data. These models represent the joint distribution of transcription factor binding sites and of expression levels of a gene in a single ...

## 12 A Bayesian decision model for cost optimal record matching

V. S. Verykios, G. V. Moustakides, M. G. Elfeky

May 2003 The VLDB Journal — The International Journal on Very Large Data Bases, Volume 12 Issue 1

Publisher: Springer-Verlag New York, Inc.

Full text available: pdf(180.87 KB) Additional Information: full citation, abstract, citings, index terms

In an error-free system with perfectly clean data, the construction of a global view of the data consists of linking - in relational terms, joining - two or more tables on their key fields. Unfortunately, most of the time, these data are neither carefully controlled for quality nor necessarily defined commonly across different data sources. As a result, the creation of such a global data view resorts to approximate joins. In this paper, an optimal solution is proposed for the matching or the lin ...

Keywords: Cost optimal statistical model, Data cleaning, Record linkage

## 13 Model Averaging for Prediction with Discrete Bayesian Networks

Denver Dash, Gregory F. Cooper

December 2004 The Journal of Machine Learning Research, Volume 5

**Publisher: MIT Press** 

Full text available: pdf(267.17 KB) Additional Information: full citation, abstract

In this paper we consider the problem of performing Bayesian model-averaging over a class of discrete Bayesian network structures consistent with a partial ordering and with bounded in-degree k. We show that for N nodes this class contains in the worst-case at least <img align=middle src=dash04a-omega.jpeg alt="omega eq"> distinct network structures, and yet model averaging over these structures can be performed using <img align=middle src=dash04a-bigo.jpeg alt="bigo eq"&q ...

# 14 Learning Bayesian network classifiers by maximizing conditional likelihood

Daniel Grossman, Pedro Domingos

July 2004 Proceedings of the twenty-first international conference on Machine learning ICML '04

**Publisher: ACM Press** 

Full text available: 🔂 pdf(187.23 KB) Additional Information: full citation, abstract, references

Bayesian networks are a powerful probabilistic representation, and their use for classification has received considerable attention. However, they tend to perform poorly when learned in the standard way. This is attributable to a mismatch between the objective function used (likelihood or a function thereof) and the goal of classification (maximizing accuracy or conditional likelihood). Unfortunately, the computational cost of optimizing structure and parameters for conditional likelihood is pro ...

# 15 Learning with mixtures of trees

Marina Meila, Michael I. Jordan

September 2001 The Journal of Machine Learning Research, Volume 1

Publisher: MIT Press

Full text available: pdf(400.02 KB) Additional Information: full citation, abstract, citings

This paper describes the mixtures-of-trees model, a probabilistic model for discrete multidimensional domains. Mixtures-of-trees generalize the probabilistic trees of Chow and Liu (1968) in a different and complementary direction to that of Bayesian networks. We present efficient algorithms for learning mixtures-of-trees models in maximum likelihood and Bayesian frameworks. We also discuss additional efficiencies that can be obtained when data are "sparse," and we present data structures and alg ...

16 Probabilistic object bases



Thomas Eiter, James J. Lu, Thomas Lukasiewicz, V. S. Subrahmanian
September 2001 ACM Transactions on Database Systems (TODS), Volume 26 Issue 3

Publisher: ACM Press

Full text available: pdf(663.73 KB) Additional Information: full citation, abstract, references, index terms

Although there are many applications where an object-oriented data model is a good way of representing and querying data, current object database systems are unable to handle objects whose attributes are uncertain. In this article, we extend previous work by Kornatzky and Shimony to develop an algebra to handle object bases with uncertainty. We propose concepts of consistency for such object bases, together with an NP-completeness result, and classes of probabilistic object bases for which consi ...

Keywords: Consistency, object-oriented database, probabilistic object algebra, probabilistic object base, probability, query language, query optimization

17 Seeing, hearing, and touching: putting it all together



Brian Fisher, Sidney Fels, Karon MacLean, Tamara Munzner, Ronald Rensink

August 2004 Proceedings of the conference on SIGGRAPH 2004 course notes GRAPH

**Publisher: ACM Press** 

Full text available: pdf(20.64 MB) Additional Information: full citation

<sup>18</sup> Multi Relational Data Mining (MRDM): Probabilistic logic learning



Luc De Raedt, Kristian Kersting

July 2003 ACM SIGKDD Explorations Newsletter, Volume 5 Issue 1

**Publisher: ACM Press** 

Full text available: pdf(1.98 MB)

Additional Information: full citation, abstract, references, citings

The past few years have witnessed an significant interest in probabilistic logic learning, i.e. in research lying at the intersection of probabilistic reasoning, logical representations, and machine learning. A rich variety of different formalisms and learning techniques have been developed. This paper provides an introductory survey and overview of the state-of-theart in probabilistic logic learning through the identification of a number of important probabilistic, logical and learning concept ...

Keywords: data mining, inductive logic programming, machine learning, multi-relational data mining, probabilistic reasoning, uncertainty

19 Dialog and elicitation: Bringing order into bayesian-network construction



E. M. Helsper, L. C. van der Gaag, A. J. Feelders, W. L. A. Loeffen, P. L. Geenen, A. R. W.

October 2005 Proceedings of the 3rd international conference on Knowledge capture K-CAP '05

Publisher: ACM Press

Full text available: pdf(148.56 KB) Additional Information: full citation, abstract, references, index terms

Among the tasks involved in building a Bayesian network, obtaining the required probabilities is generally considered the most daunting. Available data collections are often too small to allow for estimating reliable probabilities. Most domain experts, on the other hand, consider assessing the numbers to be quite demanding. Qualitative probabilistic knowledge, however, is provided more easily by experts. We propose a method for obtaining probabilities, that uses qualitative expert knowledge to c ...

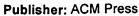
**Keywords**: bayesian networks, interview techniques, probability estimation, uncertainty

20 Special issue on knowledge representation



Ronald J. Brachman, Brian C. Smith

February 1980 ACM SIGART Bulletin, Issue 70



Full text available: pdf(13.13 MB) Additional Information: full citation, abstract

In the fall of 1978 we decided to produce a special issue of the SIGART Newsletter devoted to a survey of current knowledge representation research. We felt that there were twe useful functions such an issue could serve. First, we hoped to elicit a clear picture of how people working in this subdiscipline understand knowledge representation research, to illuminate the issues on which current research is focused, and to catalogue what approaches and techniques are currently being developed. Secon ...

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21 Propositional and relational Bayesian networks associated with imprecise and

qualitative probabilistic assessments Fabio Gagliardi Cozman, Cassio Polpo de Campos, Jaime Shinsuke Ide, José Carlos Ferreira

da Rocha

July 2004 Proceedings of the 20th conference on Uncertainty in artificial intelligence **AUAI '04** 

Publisher: AUAI Press

Full text available: pdf(340.75 KB) Additional Information: full citation, abstract, references

This paper investigates a representation language with flexibility inspired by probabilistic logic and compactness inspired by relational Bayesian networks. The goal is to handle propositional and first-order constructs together with precise, imprecise, indeterminate and qualitative probabilistic assessments. The paper shows how this can be achieved through the theory of credal networks. New exact and approximate inference algorithms based on multilinear programming and iterated/loopy propaga ...

22 An algorithm for the recovery of both target joint beliefs and full belief from Bayesian





networks

Mark Bloemeke

April 1998 Proceedings of the 36th annual Southeast regional conference

**Publisher: ACM Press** 

Full text available: pdf(635.94 KB) Additional Information: full citation, references, index terms

23 Dynamic conditional random fields: factorized probabilistic models for labeling and



segmenting sequence data

Charles Sutton, Khashayar Rohanimanesh, Andrew McCallum

July 2004 Proceedings of the twenty-first international conference on Machine learning ICML '04

**Publisher: ACM Press** 

Full text available: pdf(169.61 KB) Additional Information: full citation, abstract, references, citings

In sequence modeling, we often wish to represent complex interaction between labels, such as when performing multiple, cascaded labeling tasks on the same sequence, or when long-range dependencies exist. We present dynamic conditional random fields (DCRFs), a generalization of linear-chain conditional random fields (CRFs) in which each time slice contains a set of state variables and edges---a distributed state representation as in dynamic Bayesian networks (DBNs)---and parameters are tie ...

<sup>24</sup> Content 6: multimodal processing: Multimodal metadata fusion using causal strength

Yi Wu, Edward Y. Chang, Belle L. Tseng



Publisher: ACM Press

Full text available: pdf(541.39 KB) Additional Information: full citation, abstract, references, index terms

We propose a probabilistic framework that uses influence diagrams to fuse metadata of multiple modalities for photo annotation. We fuse contextual information (location, time, and camera parameters), visual content (holistic and local perceptual features), and semantic ontology in a synergistic way. We use causal strengths to encode causalities between variables, and between variables and semantic labels. Through analytical and empirical studies, we demonstrate that our fusion approach can achie ...

Keywords: causal strength, influence diagram, multimodal fusion, photo annotation

# 25 A new characterization of probabilities in Bayesian networks

Lenhart K. Schubert

July 2004 Proceedings of the 20th conference on Uncertainty in artificial intelligence AUAI '04

**Publisher: AUAI Press** 

Full text available: pdf(465.79 KB) Additional Information: full citation, abstract, references

We characterize probabilities in Bayesian networks in terms of algebraic expressions called quasi-probabilities. These are arrived at by casting Bayesian networks as noisy AND-OR-NOT networks, and viewing the subnetworks that lead to a node as arguments for or against a node. Quasi-probabilities are in a sense the "natural" algebra of Bayesian networks: we can easily compute the marginal quasi-probability of any node recursively, in a compact form; and we can obtain the joint quasi-probabilit ...

# 26 Efficient reasoning

Russell Greiner, Christian Darken, N. Iwan Santoso

March 2001 ACM Computing Surveys (CSUR), Volume 33 Issue 1

**Publisher: ACM Press** 

Full text available: pdf(445.41 KB)

Additional Information: full citation, abstract, references, citings, index terms, review

Many tasks require "reasoning"—i.e., deriving conclusions from a corpus of explicitly stored information—to solve their range of problems. An ideal reasoning system would produce all-and-only the correct answers to every possible query, produce answers that are as specific as possible, be expressive enough to permit any possible fact to be stored and any possible query to be asked, and be (time) efficient

**Keywords**: efficiency trade-offs, soundness/completeness/expressibility

# 27 <u>Large-Sample Learning of Bayesian Networks is NP-Hard</u>

David Maxwell Chickering, David Heckerman, Christopher Meek December 2004 **The Journal of Machine Learning Research**, Volume 5

Publisher: MIT Press

Full text available: pdf(467.11 KB) Additional Information: full citation, abstract

In this paper, we provide new complexity results for algorithms that learn discrete-variable Bayesian networks from data. Our results apply whenever the learning algorithm uses a scoring criterion that favors the simplest structure for which the model is able to represent the generative distribution exactly. Our results therefore hold whenever the learning algorithm uses a consistent scoring criterion and is applied to a sufficiently large dataset. We show that identifying high-scoring structure ...

28

System design methodologies: Any-time probabilistic switching model using bayesian



Shiva Shankar Ramani, Sanjukta Bhanja

August 2004 Proceedings of the 2004 international symposium on Low power electronics and design

**Publisher: ACM Press** 

Additional Information: full citation, abstract, references, index terms Full text available: pdf(72.41 KB)

Modeling and estimation of switching activities remain to be important problems in lowpower design and fault analysis. A probabilistic Bayesian Network based switching model can explicitly model all spatio-temporal dependency relationships in a combinational circuit, resulting in zero-error estimates. However, the space-time requirements of exact estimation schemes, based on this model, increase with circuit complexity [1, 2]. This paper explores a non-simulative, Importance Sampling bas ...

**Keywords**: bayesian networks, power estimation, probabilistic modeling

# 29 Evaluation of an inference network-based retrieval model

Howard Turtle, W. Bruce Croft

July 1991 ACM Transactions on Information Systems (TOIS), Volume 9 Issue 3

**Publisher: ACM Press** 

Additional Information: full citation, references, citings, index terms, Full text available: pdf(2.40 MB)

review

Keywords: document retrieval, inference networks, network retrieval models

# Learning equivalence classes of bayesian-network structures

David Maxwell Chickering

March 2002 The Journal of Machine Learning Research, Volume 2

Publisher: MIT Press

Full text available: pdf(442.83 KB)

Additional Information: full citation, abstract, references, citings, index

Two Bayesian-network structures are said to be <em> equivalent</em> if the set of distributions that can be represented with one of those structures is identical to the set of distributions that can be represented with the other. Many scoring criteria that are used to learn Bayesian-network structures from data are <em> score equivalent</em>; that is, these criteria do not distinguish among networks that are equivalent. In this paper, we consider using a score equivalent ...

# 31 Variational Message Passing

John Winn, Christopher M. Bishop

September 2005 The Journal of Machine Learning Research, Volume 6

**Publisher: MIT Press** 

Full text available: pdf(456.23 KB) Additional Information: full citation, abstract

Bayesian inference is now widely established as one of the principal foundations for machine learning. In practice, exact inference is rarely possible, and so a variety of approximation techniques have been developed, one of the most widely used being a deterministic framework called variational inference. In this paper we introduce Variational Message Passing (VMP), a general purpose algorithm for applying variational inference to Bayesian Networks. Like belief propagation, VMP proceeds by send ...

# 32 Optimal structure identification with greedy search

David Maxwell Chickering

March 2003 The Journal of Machine Learning Research, Volume 3

**Publisher: MIT Press** 



Full text available: pdf(462.82 KB) Additional Information: full citation, abstract, references, citings, index

In this paper we prove the so-called "Meek Conjecture". In particular, we show that if a DAG H is an independence map of another DAG G, then there exists a finite sequence of edge additions and covered edge reversals in G such that (1) after each edge modification H remains an independence map of G and (2) after all modifications G = H. As shown by Meek (1997), this result has an important consequence for Bayesian approaches to learning Bayesian ne ...

33 An efficient multi-relational Naïve Bayesian classifier based on semantic relationship





Hongyan Liu, Xiaoxin Yin, Jiawei Han

August 2005 Proceedings of the 4th international workshop on Multi-relational mining MRDM '05

Publisher: ACM Press

Full text available: pdf(197.03 KB) Additional Information: full citation, abstract, references, index terms

Classification is one of the most popular data mining tasks with a wide range of applications, and lots of algorithms have been proposed to build accurate and scalable classifiers. Most of these algorithms only take a single table as input, whereas in the real world most data are stored in multiple tables and managed by relational database systems. As transferring data from multiple tables into a single one usually causes many problems, development of multi-relational classification algorithms b ...

Keywords: Naïve Bayes, classification, data mining

34 Special issue on independent components analysis: Beyond independent



components: trees and clusters Francis R. Bach, Michael I. Jordan

December 2003 The Journal of Machine Learning Research, Volume 4

**Publisher: MIT Press** 

Full text available: pdf(271.81 KB) Additional Information: full citation, abstract, index terms

We present a generalization of independent component analysis (ICA), where instead of looking for a linear transform that makes the data components independent, we look for a transform that makes the data components well fit by a tree-structured graphical model. This tree-dependent component analysis (TCA) provides a tractable and flexible approach to weakening the assumption of independence in ICA. In particular, TCA allows the underlying graph to have multiple connected componen ...

35 Research track papers: Interestingness of frequent itemsets using Bayesian networks





as background knowledge

Szymon Jaroszewicz, Dan A. Simovici

August 2004 Proceedings of the tenth ACM SIGKDD international conference on Knowledge discovery and data mining KDD '04

**Publisher: ACM Press** 

Full text available: pdf(191.90 KB) Additional Information: full citation, abstract, references, index terms

The paper presents a method for pruning frequent itemsets based on background knowledge represented by a Bayesian network. The interestingness of an itemset is defined as the absolute difference between its support estimated from data and from the Bayesian network. Efficient algorithms are presented for finding interestingness of a collection of frequent itemsets, and for finding all attribute sets with a given minimum interestingness. Practical usefulness of the algorithms and their efficiency ...

Keywords: Bayesian network, association rule, background, frequent itemset, interestingness, knowledge

Computer science, games, and logic: Structured models for multi-agent interactions
Daphne Koller, Brian Milch

July 2001 Proceedings of the 8th conference on Theoretical aspects of rationality and knowledge

Publisher: Morgan Kaufmann Publishers Inc.

Full text available: pdf(1.40 MB) Additional Information: full citation, abstract, references

The traditional representations of games using the extensive form or the strategic (normal) form obscure much of the structure that is present in real-world games. In this paper, we propose a new representation language for general multi-player noncooperative games --- <I>multi-agent influence diagrams (MAIDs).</I> This representation extends graphical models for probability distributions to a multi-agent decision-making context. The basic elements in the MAID representation are < ...

37 Special issue on on inductive logic programming: Ilp: a short look back and a longer look forward

David Page, Ashwin Srinivasan

December 2003 The Journal of Machine Learning Research, Volume 4

Publisher: MIT Press

Full text available: pdf(103.21 KB) Additional Information: full citation, abstract, references, index terms

Inductive logic programming (ILP) is built on a foundation laid by research in machine learning and computational logic. Armed with this strong foundation, ILP has been applied to important and interesting problems in the life sciences, engineering and the arts. This paper begins by briefly reviewing some example applications, in order to illustrate the benefits of ILP. In turn, the applications have brought into focus the need for more research into specific topics. We enumerate and elaborate f ...

38 <u>Dependency preserving probabilistic modeling of switching activity using bayesian</u>



<u>networks</u>

Sanjukta Bhanja, N. Ranganathan

June 2001 Proceedings of the 38th conference on Design automation

**Publisher: ACM Press** 

Full text available: pdf(226.44 KB)

Additional Information: full citation, abstract, references, citings, index terms

We propose a new switching probability model for combinational circuits using a**Logic-Induced-Directed-Acyclic-Graph**(LIDAG) and prove that such a graph corresponds to a**Bayesian Network**guaranteed to map all the dependencies inherent in the circuit. This switching activity can be estimated by capturing complex dependencies (spatio-temporal and conditional) among signals efficiently by local message-passing based on the Bayesian networks. Switching activity estimation of ISCAS and ...

39 <u>Learning Hidden Variable Networks: The Information Bottleneck Approach</u>



Gal Elidan, Nir Friedman

January 2005 The Journal of Machine Learning Research, Volume 6

Publisher: MIT Press

Full text available: pdf(744.77 KB) Additional Information: full citation, abstract

A central challenge in learning probabilistic graphical models is dealing with domains that involve hidden variables. The common approach for learning model parameters in such domains is the *expectation maximization* (EM) algorithm. This algorithm, however, can easily get trapped in sub-optimal local maxima. Learning the model *structure* is even more challenging. The *structural EM* algorithm can adapt the structure in the presence of hidden variables, but usually performs poorl ...

40 Software engineering: theory, application and practice: Evaluating collaborative



software in supporting organizational learning with Bayesian Networks
Mahmoud O. Elish, David C. Rine, Joel E. Foreman

March 2002 Proceedings of the 2002 ACM symposium on Applied computing

**Publisher: ACM Press** 

Full text available: pdf(574.57 KB) Additional Information: full citation, abstract, references, index terms

Many collaborative software tools have been developed in the recent years to accelerate the growing interest of many organizations to become learning organizations. Selecting a collaborative tool that best suits an organization's needs is a challenging task, given that there are no evaluation criteria against which these tools could be evaluated with respect to various organizational learning concepts. The objective of this paper is twofold. First, it derives a generic set of criteria required t ...

**Keywords**: Bayesian networks, collaborative software, mental models, organizational learning, software tools evaluation

Results 21 - 40 of 200

Result page: <u>previous</u> <u>1</u> **2** <u>3</u> <u>4</u> <u>5</u> <u>6</u> <u>7</u> <u>8</u> <u>9</u> <u>10</u> <u>next</u>

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41 Data integration and data mining: Spatial bayesian learning algorithms for geographic

information retrieval

Arron R. Walker, Binh Pham, Miles Moody

November 2005 Proceedings of the 13th annual ACM international workshop on Geographic information systems GIS '05

Publisher: ACM Press

Full text available: 🔂 pdf(529.11 KB) Additional Information: full citation, abstract, references, index terms

An increasing amount of freely available Geographic Information System (GIS) data on the Internet has stimulated recent research into Geographic Information Retrieval (GIR). Typically, GIR looks at the problem of retrieving GIS datasets on a theme by theme basis. However in practice, themes are generally not analysed in isolation. More often than not multiple themes are required to create a map for a particular analysis task. To do this using the current GIR techniques, each theme is retrieved o ...

**Keywords**: geographic information retrieval, geographic information system, information retrieval, learning Bayesian networks, spatial Bayesian learning

42 Switching Activity Estimation of Large Circuits using Multiple Bayesian Networks Sanjukta Bhanja, N. Ranganathan

January 2002 Proceedings of the 2002 conference on Asia South Pacific design automation/VLSI Design

Publisher: IEEE Computer Society Full text available: pdf(180.43 KB)

Publisher Site

Additional Information: full citation, abstract

Switching activity estimation is a crucial step in estimating dynamic power consumption in CMOS circuits. In [1], we proposed a new switching probability model based on Bayesian Networks which captures accurately the various correlations in the circuit. In this work, we propose a new strategy for efficient segmentation of large circuits so that they can be mapped to Multiple Bayesian Networks (MBN). The goal here is to achieve higher accuracy while reducing the memory requirements during the co ...

Research track papers: A Bayesian network framework for reject inference

Andrew Smith, Charles Elkan

August 2004 Proceedings of the tenth ACM SIGKDD international conference on Knowledge discovery and data mining KDD '04

Publisher: ACM Press

Full text available: 🔂 pdf(201.00 KB) Additional Information: full citation, abstract, references, index terms

Most learning methods assume that the training set is drawn randomly from the population to which the learned model is to be applied. However in many applications this assumption is invalid. For example, lending institutions create models of who is likely to repay a loan from training sets consisting of people in their records to whom loans were given in the past; however, the institution approved loan applications previously based on who was thought unlikely to default. Learning from only appro ...

**Keywords**: Bayesian networks, Heckman estimator, expectation-maximization, propensity scores, reject inference, sample selection bias

44 A multilayer personality model

Sumedha Kshirsagar

June 2002 Proceedings of the 2nd international symposium on Smart graphics SMARTGRAPH '02

Publisher: ACM Press

Full text available: pdf(5.14 MB)

Additional Information: full citation, abstract, references

Virtual humans have been the focus of computer graphics research for several years now. The amalgamation of computer graphics and artificial intelligence has lead to the possibility of creating believable virtual personalities. The focus has shifted from modeling and animation towards imparting personalities to virtual humans. The aim is to create virtual humans that can interact spontaneously using a natural language, emotions and gestures. This paper discusses a system that allows the design o ...

**Keywords:** Bayesian belief network, facial animation, five factor model, personality modeling, virtual humans

45 Local versus global link information in the Web

Pável Calado, Berthier Ribeiro-Neto, Nivio Ziviani, Edleno Moura, Ilmério Silva January 2003 ACM Transactions on Information Systems (TOIS), Volume 21 Issue 1

Publisher: ACM Press

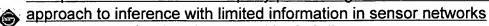
Full text available: pdf(413.06 KB)

Additional Information: full citation, abstract, references, citings, index terms

Information derived from the cross-references among the documents in a hyperlinked environment, usually referred to as link information, is considered important since it can be used to effectively improve document retrieval. Depending on the retrieval strategy, link information can be local or global. Local link information is derived from the set of documents returned as answers to the current user query. Global link information is derived from all the documents in the collection. In th ...

Keywords: Belief networks, World Wide Web, link analysis, local and global information

46 Oral presentation session V: query processing and data collection: A probabilistic



Rahul Biswas, Sebastian Thrun, Leonidas J. Guibas

April 2004 Proceedings of the third international symposium on Information processing in sensor networks

Publisher: ACM Press

Full text available: pdf(177.74 KB) Additional Information: full citation, abstract, references

We present a methodology for a sensor network to answer queries with limited and stochastic information using probabilistic techniques. This capability is useful in that it allows sensor networks to answer queries effectively even when present information is partially corrupt and when more information is unavailable or too costly to obtain. We use a Bayesian network to model the sensor network and Markov Chain Monte Carlo sampling to perform approximate inference. We demonstrate our technique on ...

47 <u>Mixtures of deterministic-probabilistic networks and their AND/OR search space</u>

Rina Dechter, Robert Mateescu

July 2004 Proceedings of the 20th conference on Uncertainty in artificial intelligence AUAI '04

Publisher: AUAI Press

Full text available: pdf(396.84 KB) Additional Information: full citation, abstract, references

The paper introduces <i>mixed networks,</i> a new framework for expressing and reasoning with probabilistic and deterministic information. The framework combines belief networks with constraint networks, defining the semantics and graphical representation. We also introduce the AND/OR search space for graphical models, and develop a new linear space search algorithm. This provides the basis for understanding the benefits of processing the constraint information separately, resulting i ...

# 48 Latent semantic models for collaborative filtering

Thomas Hofmann

January 2004 ACM Transactions on Information Systems (TOIS), Volume 22 Issue 1

**Publisher: ACM Press** 

Full text available: pdf(250.03 KB)

Additional Information: full citation, abstract, references, citings, index terms

Collaborative filtering aims at learning predictive models of user preferences, interests or behavior from community data, that is, a database of available user preferences. In this article, we describe a new family of model-based algorithms designed for this task. These algorithms rely on a statistical modelling technique that introduces latent class variables in a mixture model setting to discover user communities and prototypical interest profiles. We investigate several variations to deal wi ...

# 49 <u>Dimensionality Reduction for Supervised Learning with Reproducing Kernel Hilbert</u> Spaces

Spaces
Kenji Fukumizu, Francis R. Bach, Michael I. Jordan

December 2004 The Journal of Machine Learning Research, Volume 5

Publisher: MIT Press

Full text available: pdf(389.63 KB) Additional Information: full citation, abstract, citings, index terms

We propose a novel method of dimensionality reduction for supervised learning problems. Given a regression or classification problem in which we wish to predict a response variable Y from an explanatory variable X, we treat the problem of dimensionality reduction as that of finding a low-dimensional "effective subspace" for X which retains the statistical relationship between X and Y. We show that this problem can be formulated in terms of conditional independe ...

# 50 Reports from KDD-2001: KDD Cup 2001 report

Jie Cheng, Christos Hatzis, Hisashi Hayashi, Mark-A. Krogel, Shinichi Morishita, David Page, Jun Sese

January 2002 ACM SIGKDD Explorations Newsletter, Volume 3 Issue 2

Publisher: ACM Press

Full text available: pdf(1.96 MB) Additional Information: full citation, abstract, references, citings

This paper presents results and lessons from KDD Cup 2001. KDD Cup 2001 focused on mining biological databases. It involved three cutting-edge tasks related to drug design and genomics.

Keywords: Competition, biology, drug design, genomics

# 51 Automatic thesaurus construction using Bayesian networks

Young C. Park, Young S. Han, Key-Sun Choi

December 1995 Proceedings of the fourth international conference on Information and knowledge management

Results (page 3): Bayesian and (graphical or GUI) and table and ("conditional probabilitie... Page 4 of 6

Publisher: ACM Press

Full text available: pdf(499.76 KB) Additional Information: full citation, references, citings, index terms

52 Probabilistic query models for transaction data

Dmitry Pavlov, Padhraic Smyth

August 2001 Proceedings of the seventh ACM SIGKDD international conference on Knowledge discovery and data mining

**Publisher: ACM Press** 

Full text available: pdf(958.33 KB)

Additional Information: full citation, abstract, references, citings, index terms

We investigate the application of Bayesian networks, Markov random fields, and mixture models to the problem of query answering for transaction data sets. We formulate two versions of the querying problem: the query selectivity estimation (i.e., finding exact counts for tuples in a data set) and the query generalization problem (i.e., computing the probability that a tuple will occur in new data). We show that frequent itemsets are useful for reducing the original data to a compressed representa ...

53 Tolerating penetrations and insider attacks by requiring independent corroboration



Clifford Kahn January 1998 Proceedings of the 1998 workshop on New security paradigms

**Publisher: ACM Press** 

Full text available: pdf(1.16 MB)

Additional Information: full citation, references, index terms

Keywords: fault tolerance, information survivability, security, trust models

54 Estimation of distribution algorithms: Extracted global structure makes local building





block processing effective in XCS Martin V. Butz, Martin Pelikan, Xavier Llorà, David E. Goldberg

June 2005 Proceedings of the 2005 conference on Genetic and evolutionary computation GECCO '05

**Publisher: ACM Press** 

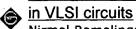
Full text available: pdf(249.90 KB) Additional Information: full citation, abstract, references, index terms

Michigan-style learning classifier systems (LCSs), such as the accuracy-based XCS system, evolve distributed problem solutions represented by a population of rules. Recently, it was shown that decomposable problems may require effective processing of subsets of problem attributes, which cannot be generally assured with standard crossover operators. A number of competent crossover operators capable of effective identification and processing of arbitrary subsets of variables or string positions we ...

Keywords: bayesian optimization algorithm, building block processing, decomposable classification problems, estimation of distribution algorithms, extended compact GA, learning classifier systems

55 Poster session 1: Causal probabilistic input dependency learning for switching model





Nirmal Ramalingam, Sanjukta Bhanja

April 2005 Proceedings of the 15th ACM Great Lakes symposium on VLSI

**Publisher: ACM Press** 

Full text available: pdf(59.42 KB) Additional Information: full citation, abstract, references, index terms

Switching model captures the data-driven uncertainty in logic circuits in a comprehensive probabilistic framework. Switching is a critical factor that influences dynamic, active leakage power, coupling noises in CMOS implementations. In this work, we model the

Results (page 3): Bayesian and (graphical or GUI) and table and ("conditional probabilitie... Page 5 of 6

input-space by a causal graphical probabilistic model that encapsulates the dependencies in inputs in a compact, minimal fashion and also allows for instantiations of the vector-space that closely match the underlying dependencies, with th ...

**Keywords**: Bayesian networks, cross-talk estimation, power estimation, probabilistic learning, vector compaction

56 Link-based and content-based evidential information in a belief network model



Ilmério Silva, Berthier Ribeiro-Neto, Pável Calado, Edleno Moura, Nívio Ziviani
July 2000 Proceedings of the 23rd annual international ACM SIGIR conference on
Research and development in information retrieval

Publisher: ACM Press

Full text available: pdf(854.30 KB)

Additional Information: <u>full citation</u>, <u>abstract</u>, <u>references</u>, <u>citings</u>, <u>index</u> <u>terms</u>

This work presents an information retrieval model developed to deal with hyperlinked environments. The model is based on belief networks and provides a framework for combining information extracted from the content of the documents with information derived from cross-references among the documents. The information extracted from the content of the documents is based on statistics regarding the keywords in the collection and is one of the basis for traditional information retrieval (IR) rankin ...

Keywords: IR models, content-based retrieval, exploiting hyperlinked structure

57 Text categorization for multi-page documents: a hybrid naive Bayes HMM approach





Paolo Frasconi, Giovanni Soda, Alessandro Vullo

January 2001 Proceedings of the 1st ACM/IEEE-CS joint conference on Digital libraries

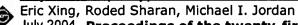
Publisher: ACM Press

Full text available: pdf(280.05 KB) Additional Information: full citation, abstract, references, index terms

Text categorization is typically formulated as a concept learning prob lem where each instance is a single isolated document. In this paper we are interested in a more general formulation where documents are organized as page sequences, as naturally occurring in digital libraries of scanned books and magazines. We describe a method for classifying pages of sequential OCR text documents into one of several assigned categories and suggest that taking into account contextual information provid ...

**Keywords:** hidden Markov models, multi-page documents, naive Bayes classifier, text categorization

58 Bayesian haplo-type inference via the dirichlet process





**Publisher: ACM Press** 

Full text available: pdf(186.80 KB) Additional Information: full citation, abstract, references

The problem of inferring haplotypes from genotypes of single nucleotide polymorphisms (SNPs) is essential for the understanding of genetic variation within and among populations, with important applications to the genetic analysis of disease propensities and other complex traits. The problem can be formulated as a mixture model, where the mixture components correspond to the pool of haplotypes in the population. The size of this pool is unknown; indeed, knowing the size of the pool would corresp ...

59 Estimation of distribution algorithms: On the convergence of an estimation of distribution algorithm based on linkage discovery and factorization

Alden H. Wright, Sandeep Pulavarty



Results (page 3): Bayesian and (graphical or GUI) and table and ("conditional probabilitie... Page 6 of 6



# June 2005 Proceedings of the 2005 conference on Genetic and evolutionary computation GECCO '05

Publisher: ACM Press

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Estimation of distribution algorithms construct an explicit model of the problem to be solved, and then use this model to guide the search for good solutions. For an important class of fitness functions, namely those with *k*-bounded epistasis, it is possible to construct a complete explicit representation of the fitness function by sampling the fitness function. A very natural model of the problem to be solved is the Boltzmann distribution of the fitness function, which is an exponential o ...

**Keywords**: Boltzmann distribution, estimation of distribution algorithms, evolutionary computation, factorization, genetic algorithms

Simulation coverage and generation for verification: Coverage directed test
 generation for functional verification using bayesian networks



Shai Fine, Avi Ziv

June 2003 Proceedings of the 40th conference on Design automation

**Publisher: ACM Press** 

Full text available: pdf(162.58 KB)

Additional Information: full citation, abstract, references, citings, index terms

Functional verification is widely acknowledged as the bottleneck in the hardware design cycle. This paper addresses one of the main challenges of simulation based verification (or dynamic verification), by providing a new approach for *Coverage Directed Test Generation* (CDG). This approach is based on Bayesian networks and computer learning techniques. It provides an efficient way for closing a feedback loop from the coverage domain back to a generator that produces new stimuli to the test ...

**Keywords**: bayesian networks, coverage analysis, functional verification

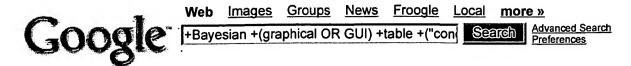
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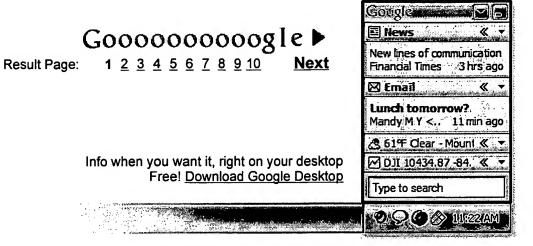
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